

REMARKS

The Office Action dated February 2, 2007 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

In accordance with the foregoing, claims 1-22 have been amended to improve clarity of the features recited therein and independent claim 23 has been added to correspond to independent claim 22 including means-plus-function terminology. The Applicants wish to thank the Examiner for indicating allowable subject matter in claims 3-6 and 13-16. Accordingly, dependent claims 3 and 4 have been amended incorporating the recitations of base claim 1 and dependent claims 13 and 14 have been amended incorporating the recitations of base claim 11. Dependent claims 2 and 7-10 have been amended to depend from allowed claim 3 and dependent claims 12 and 17-20 have been amended to depend from allowed claim 13. New dependent claims 24-33 depend from allowed claims 4 and 14, accordingly, it is respectfully requested that these claims also be allowed. Claim 21 has been amended to incorporate the allowed recitations of claim 3 and new claim 34 includes the recitations of claim 21 and allowed claim 4 accordingly, it is respectfully requested that claims 34-35 also be allowed. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-35 stand rejected and pending and under consideration.

REJECTION UNDER 35 U.S.C. § 112:

In the Office Action, at page 2, claims 5, 7, 8, 15, 17, 18, and 22 were rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness.

In response, the claims have been amended to improve clarity and antecedent support.

Accordingly, it is respectfully requested that the § 112, second paragraph rejections to the claims be withdrawn.

REJECTION UNDER 35 U.S.C. § 103:

On page 2 of the Office Action, claims 1-2, 11-12, and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable in view of U.S. Patent No. 6,879,576 to Agrawal et al. ("Agrawal") in view of U.S. Publication No. 2001/0012301 to Yi et al. ("Yi"). The rejection is traversed and reconsideration is requested.

Independent claim 1, upon which claims 2-10 are dependent, recites a method for providing enhanced utilization of code resource in a cellular systems, including terrestrial cellular code division multiple access systems, wherein a base station comprises an antenna system which generates several beams. The method includes using a spreading factor (SF) of the root channelization code to set an upper limit on the maximum bit rate; and selecting the spreading factor of the root channelization code according to the set of minimum spreading factors assumed for the different beams.

Independent claim 11, upon which claims 12-20 are dependent, recites a system for providing enhanced utilization of code resource in cellular systems including a terrestrial cellular code division multiple access systems. The system includes a base station having an antenna system configured to generate several beams. A spreading factor (SF) of the root channelization code sets an upper limit on the maximum bit rate. The system also includes a selecting unit configured to select the spreading factor of the root channelization code according to the set of minimum spreading factors assumed for the different beams.

Independent claim 21, upon which claim 22 is dependent, recites a network element to be used in a system for providing enhanced utilization of code resource in a cellular system. The network element includes a selecting unit configured to select a spreading factor of a root channelization code according to a set of minimum spreading factors assumed for different beams.

Independent claim 23 recites a system for providing enhanced utilization of code resource in cellular systems, comprising a terrestrial cellular code division multiple access systems. The system includes a base station having an antenna system for generating several beams. A spreading factor of the root channelization code sets an upper limit on the maximum bit rate. The system also includes selecting means for selecting the spreading factor of the root channelization code according to the set of minimum spreading factors assumed for the different beams.

As will be discussed below, Agrawal and Yi fail to disclose or suggest the elements of any of the presently pending claims.

Agrawal generally describes data recovering in a system in which the channelization code of a physical channel transmitting the data to be recovered, is not yet known at the time of data recovery. In Agrawal, a hypothesized channelization code is selected and used. The hypothesized channelization code is a base code that can be used to generate all possible channelization codes that may have been used for the physical channel.

As correctly recognized in the Office Action, Agrawal, fails to teach or suggest, at least, “selecting the spreading factor of the root channelization code according to the set of minimum spreading factors assumed for the different beams,” as recited in independent claim 1, and a selecting unit configured to select or selecting means for selecting “the spreading factor of the root channelization code according to the set of minimum spreading factors assumed for the different beams,” as recited in independent claims 11 and 23. Accordingly, the Office Action relied on Yi as describing these recitations. However, Applicants respectfully submit that Yi does not cure the deficiencies of Agrawal.

Specifically, Yi generally describes a technique in which a mobile station maps a signature for indicating a specific common packet channel with scrambling and transmits an access preamble including the signature to a system to request allocation of the channel. Paragraph [0145] of Yi describes that the mobile station transmits the AP

(access preamble) signature to the base station. Then, the base station determines whether to allocate a common packet channel requested by the mobile station after considering resources and total amount of traffic. Furthermore, claim 15 of Yi, to which the Office Action specifically referred to, repeats these features of transmitting an access preamble indicating a minimum Spreading Factor from the mobile to the system, and of transmitting, from the system to the mobile station, a channel allocation indicator channel in accordance with the minimum Spreading Factor etc.

The Office Action has furthermore referred to a paragraph [1177] (page 3, line 8 of the Office Action). Yet, Yi does not have any such paragraph [1177]. Applicants assume that the Office Action meant to refer to paragraph [0177] of Yi, and, in an effort to advance prosecution, the subject matter referred to in this paragraph has been considered. In particular, paragraph [0177] provides that the base station receives the AP from the mobile station to determine a maximum data rate or a minimum spreading factor requested by the mobile station. Then, the base station determines whether to allocate a CPCH requested by the mobile station, by considering the available resources of the current CPCH and a total amount of traffic. As a result, if a desired CPCH can be allocated, the base station transmits the signature equal to the received AP signature to the mobile station as an ACK signal in compliance with the start point of the access slot. If the desired CPCH cannot be allocated, however, the base station transmits an inverted signature of the received AP signature to the mobile station as a NACK signal in compliance with the start point of the access slot. However, paragraph [0177] essentially

repeats the subject matter described in paragraph [0145] and claim 15 previously discussed.

However, contrary to the contentions made in the Office Action, the referred portions of Yi, and other portions as well, are devoid of any teaching or suggestion particularly providing, at least, selecting or select “the spreading factor of the root channelization code according to the set of minimum spreading factors assumed for the different beams,” as recited in independent claims 1, 11, and 23. There is no mention in Yi of the selection of the spreading factor based on a set of minimum spreading factors assumed for the different beams. Accordingly, it is respectfully asserted that Agrawal and Yi, individually or combined, fail to teach or suggest all the recitations of independent claims 1, 11, and 23.

It is respectfully requested that independent claims 1, 11, and 23 be allowed.

On page 3 of the Office Action, claims 7-10, 17-20, and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Agrawal, Yi, and further in view of U.S. Patent No. 6,895,258 to Scherzer et al. (“Scherzer”). The rejection is traversed and reconsideration is requested.

As previously indicated, dependent claims 7-10 have been amended to depend from allowed claim 3 and dependent claims 17-20 have been amended to depend from allowed claim 13. Claim 21, upon which claim 22 depends, has been amended to include allowed subject matter recited in claim 3. As such, Applicants submit that 7-10, 17-20,

and 22 are in condition for allowance. Thus, the rejection of claims 1-7 under §103 over Agrawal, Yi, and Scherzer is considered moot.

CONCLUSION:


In view of the above, Applicant respectfully submits that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicant further submits that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicant therefore respectfully requests that each of claims 1-2, 7-12, and 17-23 be found allowable and, along with allowed claims 3-6 and 13-16, this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the Applicant respectfully petitions for an appropriate extension of time.

Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,


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